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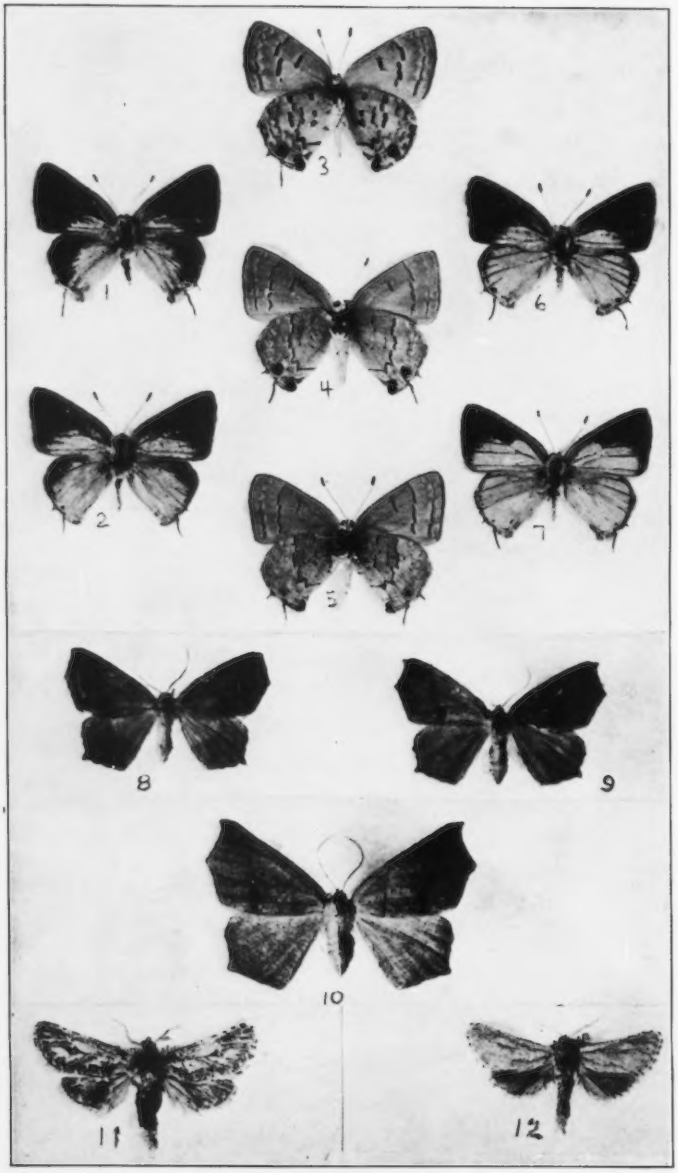

BARNES AND McDUNNOUGH.

Figs. 1, 4, 6.—*Thecla leda* Edw., ♂, ♂, ♀.
Figs. 2, 5, 7.—*Thecla ines* Edw., ♂, ♀, ♀.
Fig. 3.—*Thecla clytie* Edw., ♀.
Figs. 8, 9.—*Sabulodes sulphurata* Pack., ♂, ♀.
Fig. 10.—*S. sulphurata* form. vern. *furciferata* Pack.
Fig. 11.—*Givira cleopatra* n. sp.
Fig. 12.—*G. ethela* N. and D.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXIII. FEBRUARY, 1912. NO. 2.

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Further Remarks on Thecla clytie, leda and ines (Lepid.).

By WM. BARNES, M.D., and J. MCDUNNOUGH, Ph.D.,
Decatur, Ill.

(Plates VI, figs. 1–7)

In the July number of the ENTOMOLOGICAL NEWS for 1911, p. 293, we are treated to another of those "lumping" articles for which certain of our Californian confreres are becoming quite famous. This time it is three species from the genus *Thecla* which are the objects of attention, and after four pages of comparative tables and three pages of ordinary reading matter, Messrs. Haskin and Grinnell, Jr., arrive, in the final paragraph, at the conclusion that *Thecla clytie* Edw., *leda* Edw., and *ines* Edw. are one and the same species, and that any differences between them are "really so minute" that they consider "even form names a superfluity."

A study of the material in Coll. Barnes has brought us to a slightly different conclusion, viz. that the authors of the above mentioned article have certainly never seen a specimen of the true *clytie*, and most possibly not even of *ines*, and that from a superficial study of a series of *leda* and an attempted comparison of mere descriptions they have considered themselves in a

position to cast doubts upon the work of one of the most careful entomological observers that America has ever produced. Descriptions are at best but feeble reeds to lean upon, and are capable, like statistics, of being twisted to suit the purpose of the moment; with an idea therefore of clearing up some of the doubt which seems to exist concerning these three forms we have prepared a somewhat enlarged photograph, which is reproduced in the accompanying plate, and append further a few remarks on the same.

Thecla clytie was described from a female taken by Boll at San Antonio, Texas; it was taken later by Aaron near Corpus Christi, Tex. (Pap. IV, 180); and a single female, captured by Dr. Barnes himself in the same locality, was for a long time the sole representative of this rare species in his collection; recently, however, the receipt of one male and ten females from Brownsville, Texas, has placed us in a position to better judge of its specific value, and we have no hesitation in declaring it to be a thoroughly valid species, belonging in the same group with *leda* but abundantly distinct. It apparently is confined to Southern Texas, and the listing of it from Arizona is probably due to an error of determination. Holland's figure (Butt. Book, Plate XXX, fig. 6) is an excellent representation of the upper side of the female, and in Fig. 3 of our plate we reproduce the under side. The points of difference to *leda* mentioned by Edwards (Pap. II, 24), viz. the *pale blue* of upper side, the *red marginal line* of under side, the *broad red dashes* of the transverse band, and the small *wholly white* outer tail all hold good and are excellent means of separation, notwithstanding Messrs. Haskin and Grinnell's disparaging remarks on the subject. We would further call attention to the entirely different course and general make-up of the discal band of dashes on primaries, which in fresh specimens are bright orange-red.

The male of this species has seemingly never been described; the single specimen before us was unfortunately too worn to include in the plate; as far as we can tell there is a faint trace of blue at the base of primaries and the black sex mark in the

cell is quite distinct; on the secondaries the blue scaling extends from the base and inner margin about midway across the wing and does not exceed an imaginary line drawn from the small outer tail to the base of wing.

Aaron's reference of *clytie* to *adria* Hew., a species from Brazil, can scarcely hold; Hewitson's figure is very poor and bears merely a general resemblance to *clytie;* in the description there are also certain details which do not tally at all with the specimens before us. Wright's remark (Butt. West Coast, p. 209) that *clytie* is but a slightly larger form of *ines* is quite erroneous and not at all applicable to the true species; what species Wright has misidentified as *clytie* it is impossible to say definitely; it may, however, be *ines,* for the *ines* of Wright is the *leda* of Edwards.

Thecla leda and *ines* are two forms much more closely allied to each other than to the preceding species; in fact we are in considerable doubt as to whether they should be classed as distinct species or forms of one species; they can readily be separated, as we shall show later, and the differences between them are by no means so minute as our California friends would have us suppose. Racial forms they cannot be, as we have them from identical localities in Arizona, nor are they seasonal variations, for our date labels show that both are taken from July to September. The male genitalia appear practically identical, so the question can only be settled positively by breeding from ova of a known female. It would, however, be foolish, in our opinion, in the present state of our knowledge, to sink one as the synonym of the other; names sunk as synonyms are gradually lost sight of, and before many years we should have some enterprising entomologist describing once more this same form and thus creating a true synonym. One of the main points of difference between *leda* and *ines* has been passed over by the authors of the above-mentioned article, viz. that in *ines* "on secondaries, beyond disk, *the gray scales prevail.*" In fresh specimens of this form the contrast between the dark and light areas on the inner and outer sides of the discal band is very marked, much more so than is shown in our plate,

Fig. 5. Using this as a basis of separation we examined over 100 specimens contained among Dr. Barnes' duplicates and divided them into two groups; we next separated the sexes in each group, a task over which great care must be exercised, for in many males the sex-mark is quite faint, and in certain females, owing to the distribution of blue scales, a dark patch like a male sex-mark appears in the cell,—in doubtful cases recourse must be had to an examination of genitalia. The net result was that in one series we had specimens as represented by our figures No. 1 and No. 6, and in the other series insects corresponding to Nos. 2 and 7; the former are male and female *leda*; the latter the two sexes of *ines*. Even to the casual observer the much greater extent of the blue surface in *ines* on both wings and in both sexes is apparent; naturally slight deviations occur, but it may, we think, be stated as a general rule that in *leda* the blue scaling of primaries in both sexes never extends more than two-thirds along the inner margin and is scarcely to be seen in the cell; on the secondaries in the male sex it never extends upwards along the outer margin beyond the small tail, whilst in the female there is always a distinct dark costal margin extending downwards to about this same tail. In *ines*, on the other hand, the blue on primaries in the male is even more extended than in female *leda*, occupying the basal portion of the cell and approaching close to the anal angle; on the secondaries it extends upwards considerably beyond the small tail. In the female it covers close upon half the primaries and the whole of the secondaries, with the exception of an extremely fine marginal line of black extending from costa half-way to anal angle. Edwards certainly mixed his sexes in the description of *ines*, as Messrs. Haskin and Grinnell rightly surmised; his male is without doubt the true female, and Holland's figure (Plate XXIX, Fig. 35) is also that of the female; what Edwards' female was is a little difficult to tell from the short description; it might be the male of *ines* or even the female of *leda*—this is, however, of no great importance, as it is the first portion of the description which defines the specific name. With regard to Wright's figures, which are

made from atrociously poor specimens and can scarcely be recognized, his figure 327a (Plate XXVIII) is, in the light of our previous remarks, female *leda*, not male *ines;* 327b might be anything, but is probably male *leda*, and 327c is the under side of *leda*, certainly *not* of *ines*.

The amount of red in the bands and spots of under side of *ines* is variable and of no specific value; in typical specimens the transverse lines show very little color and the anal spots are small and dark; other specimens examined showed a considerable amount of orange-red both in bands and spots, seldom however attaining the bright color which is almost invariably present in *leda*.

Of the two forms, *ines* appears to be much the rarer, not more than 20 per cent. of the specimens examined being referable to this species; we possess it from the Huachuca Mts., Chiricahua Mts. and Prescott, Arizona, this latter being the typical locality; *leda* we have from the same localities, and it apparently extends into Southern California, although it has been recorded there under the name of *ines* (Wright, Jour. N. Y. Ent. Soc., XVI, 162).

We should be glad if some of our San Diego collectors would give us the privilege of examining the California specimens, with a view to correct identification, as we have no California material at hand.

On the Spring and Summer Forms of Sabulodes sulphurata Pack. (Lepid.).

By Wm. Barnes, M.D., and J. McDunnough, Ph.D.,
Decatur, Ill.

(Plate VI, figs. 8-10.)

On the evening of May 10, 1911, a fresh female of *Sabulodes furciferata* Pack. was taken at light and about 25 ova obtained the same night before killing the specimen. The larvae hatched in eight days and fed up well on maple, being full grown about the third week in June. At this stage, possibly on account of the excessive heat, the majority suddenly died;

three, however, pupated, the imagines appearing the second week in July. To our surprise the specimens (2 males and 1 female), instead of resembling the parent *furciferata,* were typical representatives of what is at present listed as a good species under the name of *Sabulodes sulphurata* Pack. It is evident that under these two names we have but the spring and the summer forms of a single species.

S. sulphurata was described in 1873 (Fifth Rep. Peab. Ac. Sci., p. 79), *S. furciferata* in 1876 (Mon. Geom., p. 559); the reference given in Dyar's list (Fifth Rept. Peab. Ac. Sci., p. 68, 1873) is erroneous and refers to *Goniacidalia furciferata* Pack., an entirely different species. The synonymy will therefore stand:

Sabulodes sulphurata Pack.

(a) *form. vern. furciferata* Pack.

It would be interesting to breed ova obtained from *sulphurata* and observe whether the resulting imagines are typical *furciferata;* the species probably hibernates in the pupal stage, in contradistinction to *S. transversata* Dru., which hibernates as ovum. We present figures of the parent *furciferata* and a pair of its progeny, in which latter the striking yellow color is unfortunately not evident. Following are our notes on the larval stages, which, although incomplete, will perhaps prove of some slight value, as we believe nothing of the life history of this species has yet been published.

Egg.—Very similar to that of *S. transversata;* when first laid green, turning shortly deep red and finally, before emergence, black.

Larva, 1st Stage.—Head, flat and broad, pale red; body pale greenish with a very broad black-brown dorsal band; ventrally dark brown; legs and prolegs pale; tubercles pale with short setae. Length 4 mm.

2nd Stage.—Head small, flat, pale brown; body greenish white, cylindrical, with prominent lateral fold; a broad dorsal rosy-brown band, showing traces, principally anteriorly, of two pale subdorsal lines; ventrally brown; claspers broadly fan-shaped, whitish; tubercles very minute, dark brown. Length 12 mm.

3rd Stage.— Head flat, pale brown, mottled with darker; body, smooth, cylindrical; dorsum dark purple-brown shading laterally into pale greenish; traces of a geminate pale dorsal stripe on anterior and posterior segments; fairly distinct slightly wavy subdorsal line, and

several waved lateral lines; ventrally brownish, crossed by several wavy longitudinal lines. Length 18 mm. Breadth 1.5 mm.

4th Stage.—Head flat, light or dark brown, strongly marbled with darker; palpi prominent; in a resting position head and prothorax incline dorsally upwards to mesothorax, which is considerably humped and contains two lateral protuberances. Body, cylindrical, smooth, tapering, dorsally dark purplish-brown, marbled, shading into light brown laterally; traces of dark dorsal line, much broken; indistinct light wavy subdorsal line and several similar lateral lines; tubercles small, black; dorsal tubercles on 4th and 5th abdominal segments larger, tipped with white; ventrally pale ochreous to reddish brown with broken dark medio-ventral line and several light wavy lines; prolegs more or less shaded with creamy. Length 27 mm.

5th Stage.—Head and prothorax very flat, mesothorax rising more or less abruptly above same and with two large lateral protuberances; remainder of body cylindrical. Head pale to dark ochreous, slightly marbled, with fairly prominent wart at apex of clypeus; prothorax light brown; remainder of body dark gray brown to red-brown, shaded and marbled with lighter; mesothoracic hump often tinged with white anteriorly; traces of a black dorsal line only distinct on thoracic segments; this line is bordered with light ochre, the color showing prominently on the abdominal segments where the black is lacking; several irregular wavy lateral longitudinal lines of a light ochre color, edged with black, all indistinct. Tubercles black, very small, except II on 4th and 5th abdominal segments which is larger, conical, and often marked basally with white; ventrally gray-brown, mottled and lined with darker, anterior half usually lighter than posterior portion; legs and prolegs of body color, often tinged basally and inwardly with whitish. Length 32 mm.

A New Cossid (Lepid.).

By Wm. Barnes, M.D., and J. McDunnough, Ph.D.,
Decatur, Ill.

(Plate VI, figs. 11, 12.)

Givira cleopatra n. sp.

♂.—Front, collar, and thorax composed of mixed black and white scales, giving a general grizzled gray appearance; abdomen similar, with slightly more white scales and a bifurcate anal tuft.

Primaries white, thickly sprinkled with gray, which predominates in apical portion beyond cell and around the anal angle; white color confined to a large patch in the cell, a patch extending between cubital and second anal veins from base of wing to shortly before vein Cu2, and

three irregular subterminal blotches between veins Cu2 and M2; a series of black dots along costa, increasing in size near apex; a small black patch at origin of veins Cu1 and M3 and a similar one on second anal vein obliquely below it; inner margin with several fine black strigae; on outer margin a series of black dashes, of which the apical ones are perpendicular to the margin, that between veins M1 and R5 being the longest and most prominent; the lower ones are oblique and bordered inwardly with white. Secondaries dark gray, lighter at base, with traces of marginal row of white spots; fringes on both wings checkered white and gray.

Beneath much as above; white subterminal patches less prominent; terminal black dashes very clear; secondaries, lighter than above, white, sprinkled heavily with gray; veins bordered terminally with a series of black dots.

Expanse, 29 mm.

Habitat.—Eureka, Utah (T. Spalding). 1 ♂. Type Coll. Barnes.

Somewhat similar to our species *palmata*, but differing in venation. As it was late to include a figure in our revision of North American Cossidae, just published, we reproduce it on the accompanying plate, together with *ethela* N. & D., of which species the above mentioned work only figures a very poor specimen, the only available one at the time.

Mallophaga from Islands off Lower California.

By V. L. KELLOGG and W. M. MANN, Stanford University, California.

The following determinations and descriptions of new species of bird-infesting Mallophaga are made from a collection taken by R. C. McGregor in 1897 from birds of the islands off the coast of Baja California. The determinations of the bird-hosts were made by McGregor, an accomplished ornithologist. The parasites were taken from the fresh bird specimens.

The collection is of special interest on account of the relation of the host species to the birds of the Galapagos Islands, from which two collections of Mallophagan parasites have been studied at Stanford (see "Mallophaga from Birds of the Galapagos Islands," by Kellogg and Kuwana, in Proc. Wash. Acad.

Sci., Vol. IV, pp. 457-499, Sept., 1902; and "A Second Collection of Mallophaga from Birds of the Galapagos and Revillagigedo Islands and Neighboring Waters," by Kellogg, in Trans. Amer. Ent. Soc., Vol. XXXII, pp. 315-324, Nov., 1906). The birds of the Galapagos Islands are believed to be descendants, either unmodified, or modified to be new species and new genera, of species of the western coast of northern South America, Central America and Mexico.

In the light of this presumption and in the light of the fact that those Mallophagan species found so far on more than one host species are usually found on related host species, the comparison of a Mallophagan collection from birds of the West Coast of America (south of the United States) with the full collections already made from the Galapagos birds might be expected to turn up a number of interesting cases of host distribution. And this expectation finds some realization in the present opportunity.

Of the Mallophagan species included in this collection from birds of the islands off Baja California, fifteen have been also recorded from birds of the Galapagos Islands. Among these cases of common occurrence the taking of *Docophorus speotyti* Osborn, recorded from *Speotyto rostratus* and *Speotyto hypogaea* from Baja California, from *Speotyto* sp. of the Galapagos Islands is of special interest, as is the taking from *Anous stolidus* of the Galapagos Islands of *Colpocephalum milleri* recorded from *Anous ridgwayi* from Baja California.

Docophorus acanthus Giebel.

A single specimen from *Haematopus bachmanni,* San Benito Island.

Docophorus lari Denny.

Two males from *Aechmophorus occidentalis,* Ensenada Isl.

Docophorus platystomus Nitzsch.

Two specimens from *Haliaeetus leucocephalus,* Todos Santos Island.

Docophorus californiensis Kellogg var. **quadripustulatus** var. nov.

In the collection are four specimens that differ markedly from typical *californiensis* in having most of the hairs on the

abdomen distinctly pustulate and regularly arranged, four in a row. Equidistant on each side of the row, close to the posterior margin of the segment is an additional pustulate hair. On the sixth segment there are only two central hairs, and on the penultimate and last segments only the marginal hairs are pustulate. This variety is somewhat larger than the typical form (males 1.90 mm.). One male and one female from *Pipilio carmani*, Socorro Island; two specimens from *Conurus holochlorus*, Socorro Island.

Docophorus breviantennatus Piaget.

Three males and two females referable to this species, from *Phaethon aethereus*, Socorro Island. Another male from *Sula gossi*, San Benidicte Island. *Docophorus breviantennatus* approaches most closely *D. validus*, but the connected dorsal bands of the former will at once distinguish it.

Docophorus speotyti Osborn.

Five specimens from *Speotyto rostratus*, Clarion Island, and others from *Speotyto hypogeae*, San Benito Island.

Docophorus insolitus Kellogg.

Two males from *Ptychoramphus aleuticus*, San Geronimo Island.

Docophorus montereyi Kellogg.

A single specimen from *Brachyramphus hypoleucus*, San Benito Island.

Docophorus sp. juv.

Two specimens, too young to identify positively, probably undescribed, from *Haematopus frazeri*, San Martin Island.

Nirmus faralloni Kellogg.

One specimen from *Arenaria melanocephala*, San Geronimo Island.

Two specimens from *Larus heermani*, San Geronimo Island.

Nirmus latifasciatus Piaget.

One specimen from *Haematopus frazeri*, San Martin Island.

Nirmus gloriosus Kellogg and Kuwana.

One male and two females from *Sterna anaetheta*, Socorro Island.

Nirmus euprepes Kellogg and Chapman.

Male and female from *Arenaria melanocephala*, San Martin Island.

Nirmus caracarensis n. sp.

Three males from a caracara, *Polyborus lentosus*, Guadeloupe Island. This specimen most closely approaches *N. splendidus* Kellogg, but differs in the much smaller size, the broadly rounded clypeus, and the markings. It is perhaps related both to *splendidus* and to *N. discocephalus* Nitzsch, and the three species form a group distinguished by the broad abdomen and rounded head. The three species infect raptorial birds. *Splendidus* was found on *Polyborus cheriway*.

Description of the male.—Body, length 1.76 mm.; width .73 mm.; form broad, color whitish with brown markings, thorax entirely brown, head broad and rounded and, except clypeus and signature, brown.

Head, length .57 mm.; width, .48 mm.; forehead broad between trabeculae, sides converging, straight to near front, which is broad and rounded; forehead with five short separated hairs on each side, trabeculae large for *Nirmus;* antennae short, uncolored; eye large, prominent with a long hair, and a fine prickle just behind it; temporal margins evenly rounded, with two long hairs; occipital margin concave; whole head except the signature and clypeus, brownish; antennal bands narrow, a little darker than the general color of head, running entirely around frontal margin of head, paler in front; trabeculae uncolored.

Prothorax short, with one hair in posterior angles; segment wholly colored; metathorax short, the whole thorax about one-half as long as head, and obtusely angulated on abdomen; two very long hairs on lateral margin, and posterior margin with two long hairs on each side; segment entirely grown; legs pale.

Abdomen ovate; posterior angles of segments 1 and 2 without hairs, segments 3 and 4 with a single hair, succeeding segments with two hairs; dorsal surface of each segment with about fifteen long hairs arranged in a single transverse row; posterior segments with fewer hairs, whitish with an uninterrupted transverse brown blotch on each segment; segment 9 rounded behind, with numerous longish hairs; uncolored except where the chitinized genitalia show through, the genital blotch not distinct.

Nirmus melanococcus Carriker.

Two females from *Mimodes greysoni*, Socorro Island. *Melanococcus* was described from a single female collected on

Piranga bidentata sanguinolenta in Costa Rica. Our specimens have a head much longer than that figured by Carriker, and may possibly be a distinct variety, but the *brachythorax* group (to which this species belongs) is at present too little known to justify the giving of names in it on slight differences.

Nirmus lucidus n. sp.

One adult female and two immature specimens from the marbled godwit, *Limosa fedoa,* Playa Maria Bay. This species is close to Osborn's *N. cordatus,* but the more general elongate form of *lucidus* will at once separate it from that species.

Description of female.—Length 2.2 mm.; width .6 mm.; elongate; color clear, with translucent brownish yellow markings; rather Lipeuroid in general appearance.

Head, length .45 mm.; width .43 mm.; pale brownish yellow; sides slightly convex, and broadly rounded front; clypeus flatly rounded in front; trabeculae very small, colorless; antennae short and thick, colored same as head; eye flat, colorless, with one fine bristle; light-colored antennary bands converging in front, the space between them clearer but with darker triangular mark; mandibles light brown in color.

Prothorax small, sub-quadrangular, sides convex; narrow light brownish-yellow lateral bands almost unite at middle of posterior margin; coxal markings showing through as brownish yellow blotches. Metathorax larger, form similar to that of prothorax, except for obtusely angulate posterior margin; marginal bands distinct, though faintly colored; hairs on side very weak; coxae showing through as brownish yellow blotches; legs stout, tibiae brownish yellow, femora with large yellow spot, otherwise colorless.

Abdomen elongate elliptical, widest at fourth segment; posterior angles of segments little rounded, with a single marginal hair except on the first two segments; dorsum with short scattered hairs; color clear without marginal bands; transverse blotches light yellowish brown in color, extending width of segments, not interrupted; last segment with very faint blotch.

Nirmus nesiotes sp. nov.

One female from *Haematopus bachmani,* San Martin Island. This new *Nirmus* approaches Piaget's *coniceps* and Carriker's *rhamphasti,* the first from a hornbill, the other from a toucan. It is rather remarkable to find such closely related Mallophagous species on birds as widely separated as to relationship.

The new species is closest to *rhamphasti* but can be distinguished from it by the more elongate form, the testaceous prothoracic bands, only slightly interrupted at middle, the more elongate head, and the head markings.

Description of female.—Body, length 2 mm., width .66 mm., moderately robust, for the most part clear with distinct testaceous markings and a piceous brown abdominal margin.

Head, length .75 mm.; width .48 mm.; front conical, broad, slightly concave at apex; sides slightly concave with four short hairs; clypeus clear, slightly emarginate in front; trabeculae short, colorless; antennae colorless, short, of medium thickness, the second segment longest; temples little rounded, expanded slightly anteriorly and posteriorly, with two hairs; eye prominent, colorless, with bristle; occiput concave; antennal bands broad, faintly colored; mandibles reddish brown; a small black ocular fleck; whole head slightly testaceous, except oval fossae and part between occipital bands.

Prothorax short, sides rounded, without hairs, blackish brown lateral bands, extending around on posterior margin and almost meeting; coxal bands visible; interior of segment same color as head; metathorax larger, pentagonal, posterior margin broadly angulated on abdomen; three hairs at posterior angles; sides convex, widely diverging; black-brown lateral bands curving inward; legs pale with golden tinge at end of tibiae.

Abdomen oval, colorless except faint median blotches on last three segments and sharply defined marginal band strongly piceous to brown, fainter on last two segments; each segment except the first two with two long hairs at outer angle; dorsum with long slender hairs.

Nirmus actophilus Kellogg and Chapman.

Two males from *Aphriza virgata,* San Geronimo Island.

Nirmus complexivus Kellogg and Chapman.

One specimen from *Limosa fedoa,* Playa Maria Bay.

Nirmus ductilis Kellogg and Chapman.

One specimen from *Amphispiza belli,* San Martin Island.

Nirmus maritimus Kellogg and Chapman.

Two specimens from *Ptychoramphus aleuticus.*

Nirmus ochropygus Nitzsch.

Male and female from *Haematopus frazeri,* San Martin Island.

Nirmus felix Giebel.

One specimen from *Larus heermani,* Todos Santos Island.

Philoceanus becki Kellogg.

One female from *Carpodacus amplus*, Guadeloupe Island.

The specimen is a little larger than the type, but agrees in all other respects. The type was taken from *Procellaria tethys*, on Wenman Island of the Galapagos group. Our specimen may be a straggler, though we have no records of *Procellaria* in this collection.

The abdomen of this specimen, and of the type female, is much more distinctly margined than is shown in the original drawing of the species. (The size might make this worthy of varietal name.)

Giebelia mirabilis Kellogg.

Four specimens from *Puffinus opisthomelas*, Natividad Island.

Lipeurus baculus Nitzsch.

One male from *Columbigallina passerina socorroensis*, Socorro Island.

Lipeurus confidens Kellogg.

Three specimens from *Diomedea nigripes*, Magdalena Bay; one from *Diomedea immutabilis* near San Geronimo Island.

Lipeurus concinnus Kellogg and Chapman.

Four specimens from *Oceanodrama macrodactyla*, Guadeloupe Island. One specimen from *Diomedea immutabilis*, near San Geronimo Island.

Lipeurus diversus Kellogg.

Four females from *Oceanodrama macrodactyla*, Guadeloupe Island.

Lipeurus gracilicornis var. **major** Kellogg.

Two females from *Fregata aquila*, San Benedicte Island.

Lipeurus faralloni Kellogg.

Two specimens, too young to identify positively, probably undescribed, from *Haematopus frazeri*, San Martin Island.

Lipeurus fuliginosus Tasch.

Three specimens from *Puffinus opisthomelas*, Natividad Island.

Lipeurus testaceus Tasch.

Two specimens from *Puffinus opisthomelas,* Natividad Island.

Lipeurus limitatus Kellogg.

One female from *Oceanodrama macrodactyla,* Guadeloupe Island.

Eurymetopus taurus Nitzsch.

Two males from *Diomedea nigripes,* Magdalena Bay; one female and one immature specimen from the same albatross species, off Cape San Lucas. Another female bears the host record, *Carpodacus amplus,* Guadeloupe Island, but is evidently a straggler.

Colpocephalum funebre Kellogg.

One specimen from *Larus heermani,* San Geronimo Island.

Colpocephalum unciferum Kellogg.

One female from *Puffinus auricularis,* Clarion Island.

Colpocephalum sp. juv.

A specimen, too young to be determined, from *Puffinus auricularis,* Clarion Island.

Colpocephalum milleri Kellogg and Kuwana.

Three specimens of this species from *Anous ridgwayi,* Socorro Island, and two from *Sterna anaetheta,* Socorro Island.

Colpocephalum flavescens Nitzsch.

Four specimens from *Speotyto hypogaea,* San Benito Island.

Colpocephalum dominicanum n. sp.

Two males from *Oceanodrama macrodactyla,* Guadeloupe Island. This specimen approaches *spinosum* of Piaget, from *Francolinus capensis.*

Description of male.—Body, length 1.72 mm.; width .60 mm.; strongly brown, concolorous with the exception of abdomen, which has slightly darker transverse blotches; head of unusual and distinctive shape.

Head, length .40 mm.; width .44 mm.; broadly rounded in front, with rather short hairs on the margin; ocular emargination not deep; eye small, convex; temples extended but slightly and moderately rounded, with three very long hairs; posterior angles angularly meeting occipital margin; occipital margin slightly concave; mandibles piceous.

Prothorax twice as broad as long; sides extended, coxae showing through very slightly darker; otherwise without distinct markings; sides with one long hair. Metathorax narrow in front; sides slightly arcuate, diverging; color brown, coxae showing through as darker blotches; dorsum with short scattered hairs; sides with one long hair; legs short, femora thick, lighter than general body color, and with numerous bristles.

Abdomen elongate; basal segment as broad as apex of thorax; broadest at segments 3 to 5; first segment with one hair at marginal angle; others with two long hairs; dorsum with many scattered long hairs; apical segment with fringe of shorter hairs; color almost uniformly dark brown, the marginal blotches showing slightly darker than the rest of the surface.

Colpocephalum tigrum n. sp.

Three males from *Arenaria melanocephala*, San Martin Island, and two from *Aphriza virgata*, San Geronimo Island. The described species nearest this is *C. trimaculatum* Piaget, but the broad, complete transverse blotches of the metathorax and first abdominal segment at once distinguish that species from *tigrum*.

Description of male.—Body, length, 1.60 mm.; width .64 mm.; color clear with brownish blotches, producing a strikingly and unusually marked *Colpocephalum*.

Head, length .35 mm.; width .42 mm.; front broadly rounded, semicircular; four short and two medium hairs on the frontal margin, a long hair on lateral margin of front; ocular fringe prominent; eye distinct, with a prominent bristle; temples prominent, with three strong hairs; posterior margin of occiput concave; mandibles dark brown; ocular blotches dark brown, large, about twice as long as base of eye; a small brown blotch on signature; occipital bands light brown, except for darker spots at base and at apex converging; space between occipital bands brown; most of head with faint smoky brown color.

Prothorax about twice as broad as long; sides angulate at anterior third, with short hair at angle; coxae showing through as brown blotches; a shield-shaped brown ventral blotch, and a brown margin, the rest colorless. Metathorax at broadest part as broad as base of abdomen; sides angulate at middle, the angles bearing two bristles; colorless except for brown margin, a shield-shaped ventral blotch, and a short brown longitudinal line at base; coxae showing through as brown blotches; legs short, femora very thick; a faint brown spot on outer edge of femur near base, and a dark brown spot near tip of tibiae; tarsi faintly yellow; legs otherwise uncolored or faintly smoky.

Abdomen elongate oval, broadest at third and fourth segments; the segments of nearly equal length, a stout bristle at the posterior angle of each, each segment except the first with a long stout hair in addition to bristle, a single transverse row of weak hairs on dorsum of each segment except last two; first to sixth segments with a transverse narrow brown dorsal blotch, first to seventh with an irregular, darker marginal blotch, seventh segment with faint dorsal blotch, eighth with four small blotches; last segment with rows of minute hairs; genitalia not visible; except for above blotches abdomen is colorless.

Menopon dissimile Kellogg.

One male from *Pyrrholoxia venusta peninsulae*, San Jose del Cabo.

Menopon infrequens Kellogg.

Three males from *Larus heermani*, San Geronimo Island.

Menopon paululum Kellogg and Chapman.

One immature male from *Oceanodrama macrodactyla*, Guadeloupe Island.

Menopon singularis Kellogg.

Two males from *Phaethon aethereus*, Socorro Island.

Menopon becki Kellogg.

One male from *Phaethon aethereus*, Socorro Island.

Physostomum diffusum Kellogg.

One specimen from *Ammodramus sanctorum*, San Benito Island.

Physostomum subhastatum Durrant.

Three specimens from *Pipilio albigula*, San Jose del Cabo.

Physostomum fasciatus Piaget var. **arcuatus** nov. var.

Two specimens from *Tyrannus vociferus*, Cerros Island. The type of the species, taken from *Larus capistratus*, at the Zoological Garden in Amsterdam, was undoubtedly a straggler. Our specimens differ from the species figure and description in having two hairs directly anterior to the eye, the posterior angles of the head with two hairs, the sides of the prothorax with three long hairs, and the sides of the metathorax more arcuate for the posterior two thirds. The signature is piceous, and the front more convex.

Fulton County (New York), Tipulidae (Dipt.).—II.

By CHAS. P. ALEXANDER, Cornell Univ., Ithaca, N. Y.

This is a continuation of the list in ENTOMOLOGICAL NEWS, June, 1910. Since the publication of that article, much of the undetermined 1909 collection has been worked over and an immense amount of new material collected. The total number of species definitely known from the county to date is about 125, which is more than is known from most States of the Union.

A few errors in the first part, most of which must be charged against the author, should be corrected: On page 248, thirteenth line in under 2, should read, "for several hundred feet." The altitude of the island is 750 feet (average), not 875 feet. On page 251, *Trichocera crumalis* should be *T. brumalis*.

New collecting grounds: Some of the new localities visited proved to have an extremely rich Tipulid fauna. The more notable of these are:

"Psocid Glen," on the west bank of the Cayudutta creek, between Johnstown and Sammonsville; a small creek flowing into the Cayudutta at the electric-light dam. Although at a low altitude (550 feet), the fauna is distinctly Canadian.

"Prairie Lake Bog" in Caroga Township (1,870 feet); a bog in the tertiary stage, supporting a perfectly normal oxylophytic type of vegetation, such as: *Solidago uliginosa, Gentiana linearis, Acer pennsylvanicum, A. rubrum, A. spicatum, Nemopanthus mucronata, Kalmia angustifolia, Andromeda polifolia, Chamaedaphne calyculata, Chiogenes hispidula, Vaccinium macrocarpon, Aronia melanocarpa, Sarracenia purpurea, Drosera rotundifolia, D. intermedia, Myrica gale,* and a variety of sedges.

Since the publication of the first part, the acceptance of Meigen's 1800 paper by most Dipterologists has changed many of the genera used in tne *Tipulidae*. The names are given in Coquillett's "Type-Species of North American Diptera," but are widely scattered amongst the other genera of flies, so that

a compact record of the recent changes in nomenclature, as now held by many students of the family, may be of value.

Sub-fam. LIMNOBINAE	AMPHINOMINAE
Tribe LIMNOBINI	AMPHINOMINI
Genus *Limnobia* Meig. 1818	*Amphinome* Meig. 1800
Genus *Dicranomyia* Steph. 1829	*Furcomyia* Meig. 1818
Tribe ANTOCHINI, RHAMPHIDINI	MEGARHININI
Genus *Rhamphidia* Meig. 1830	*Megarhina* St. Farg. et Serv. 1828
Genus *Dicranoptycha* O. S. 1859	*Marginomyia* Meig. 1818
Tribe ERIOPTERINI	POLYMEDINI
Genus *Erioptera* Meig. 1803	*Polymeda* Meig. 1800
Genus *Rhypholophus* Kol. 1860	*Ormosia* Rond. 1856
Genus *Helobia* St. F. et S.; 1828; (preocc.)	*Symplecta* Meig. 1830
Tribe LIMNOPHILINI, TRICHOCERINI	PETAURISTINI
Genus *Trichocera* Meig. 1803	*Petaurista* Meig. 1800
Tribe ANISOMERINI	HEXATOMINI
Genus *Eriocera* Macq. 1838	*Caloptera* Guer. 1829
Genus *Amalopis* Hal. 1856	*Tricyphona* Zett. 1837
Genus *Ctenophora* (of authors, *non* Meigen)	*Phoroctema* Coq. 1910
Genus *Xiphura* Brulle 1832; *Ctenophora* Meig. 1803.	*Flabellifera* Meig. 1800
Genus *Stygeropis* Loew. 1863	*Prionocera* Loew. 1844
Family PTYCHOPTERIDAE	LIRIOPIDAE
Genus *Ptychoptera* Meig. 1803	*Liriope* Meig. 1800
Genus *Idioplasta* O. S. 1878	*Protoplasa* O. S. 1860

The present paper deals with the tribe *Amphinomini*, and begins the *Polymedini*. The remainder of the *Polymedini*, and the *Megarhinini*, *Petauristini*, *Hexatomini*, and *Pedicini*, as well as the *Cylindrotominae*, *Tipulinae* and *Liriopidae* will be considered in succeeding parts. New stations and new records for the species included in Part I are here given, with the original number in parentheses.

As in the previous part, I must acknowledge the kind advice of Prof. Needham and Prof. Johnson upon certain difficult questions.

34. **Geranomyia canadensis** Westw.

Rare. Canada Lake; Caroga T'sh'p; one ♂ only, June 23, 1911.

35. **Geranomyia rostrata** Say.

Common and widely distributed. Sacandaga Park; several

along the R. R. embankment, June 21, 1911. On Aug. 24, 1910, the species occurred in extraordinary abundance. Thousands of specimens occurred here and I secured about a dozen at each sweep of the net. They are very active and usually fly directly from the bag, not making their way up the side of the net after the fashion of most crane-flies. Sport Island, N. E. Coast, Aug. 24, 1911; some ten specimens. Johnstown, N. Y.; Sept. 14, 1909. "Psocid Glen"; Aug. 24, 1910. VanDenburgs Pond; Bleecker T'sh'p; Aug. 30, 1909. "Camp Naturalist," alt. 1428 feet; Bleecker T'sh'p; Sept. 14, 1910.

36. **Rhipidia fidelis** O. S.

Rare. Sport Is.; Sacandaga R.; June 27, 1910; ♀.

(1) **Rhipidia maculata** Meig.

Pinnacle Mt.; Bleecker T'sh'p.; alt. 2000 feet; Sept. 15, 1910; ♀.

37. **Furcomyia longipennis** Schum.

Common locally. Sacandaga R.; Sport Is. (bayou); Aug. 24, 1910. Hillside Park; Burrs Pond; abundant on marsh vegetation consisting of *Leersia, Bidens,* etc.; Aug. 4, 1909, and Sept. 9, 1910.

38. **Furcomyia immodesta** O. S.

Commonly and widely distributed. Sacandaga R.; Sport Is.; Aug. 24, 1910; both sexes; on the mainland, along the R. R. embankment, common; June 21 and 28, 1911. Johnstown; common; June 10, 1910. Gloversville; Power House Woods; Sept. 23, 1910. Woodworth's Lake; Aug. 21, 1909.

39. **Furcomyia gladiator** O. S.

Local. Extremely common in B. P. H. U. Swamp, Woodworth's Lake; Aug. 22, 1910; males were more common than females.

40. **Furcomyia rostrifera** O. S.

Common, especially in late summer and autumn. Sacandaga Park; along the R. R. embankment; June 27, 1910; June 28, 1911; Aug. 28, 1911. Sammonsville; Sept. 22, 1910; common.

Gloversville; Power-house Woods, Sept. 23, 1910; very abundant on low vegetation. Prairie Lake Bog; Aug. 31, 1911.

41. **Furcomyia liberta** O. S.

A well distributed species at low altitudes. Sacandaga R.; Sport Is.; June 17, 1910; a few, Aug. 24, 1910; June 21, 1911; rare. Johnstown; June 10, 1910, not rare; June 17, 1911.

42. **Furcomyia stigmata** Doane.

Not uncommon about the face of cliffs. Gloversville; stone quarries near the reservoir; June 19, 1910, and June 16, 1911.

A species described from California. Neither Mr. M. D. Leonard nor I can separate the New York specimens off as distinct. It is possible that an actual comparison of specimens would reveal differences. *Stigmata* is distinguished from *haeretica*, O. S., by the shortness of Sc 1, a distinct stigmal spot, and the plain brown mesothoracic praescutum.

43. **Furcomyia halterata** O. S.

Local and northern in distribution. Sacandaga Park; along the R. R. embankment; Aug. 24, 1910; ♀'s. Prairie Lake Bog; Aug. 31, 1911; a few. Woodworth's Lake; very common along B. P. H. U. Creek and in the bog-swamp at the head of the creek; Aug. 22, 1910.

44. **Furcomyia badia** Walk.

Not common. "Psocid Glen," Aug. 31, 1910; a few only. Stone quarry on the mountain side, near the Gloversville reservoir; Aug. 29, 1910, and Sept. 7, 1910. Woodworth's Lake; B. P. H. U. Creek; Aug. 22, 1910.

45. **Furcomyia morioides** O. S.

Common and widely distributed. Sacandaga Park; along the R. R. embankment; June 21, 1911. Hillside Park; Sept. 9, 1910. Johnstown; Aug. 6, 1909. "Psocid Glen," Aug. 26, 1910, a few; June 14, 1911, common, both sexes; Aug. 30, 1911, a few.

46. **Furcomyia pubipennis** O. S.

Not rare; Canadian life-zone. Sacandaga Park; along the

R. R. embankment, June 21, 1911; VanDenburg's Pond, June 19, 1911; in a sphagnum bog. Mountain Lake, June 15, 1911; common around the bog-pond. Woodworth's Lake, Aug. 19. 1909; very common about cliffs; both sexes.

47. **Furcomyia globithorax** O. S.

Rare; Canadian life-zone. One fine ♀ of this peculiar little species; Woodworth's Lake, along the outlet, Aug. 22, 1910.

48. **Furcomyia simulans** Walk.

Not common. East Canada Creek, near Ingram's Mills, Sept. 11, 1911.

49. **Amphinome immatura** O. S.

Rare. Sammonsville, Sept. 22, 1910; a broken specimen in a spider's web. Pinnacle Mt.; near cliffs; ♀; Sept. 16, 1910.

50. **Amphinome solitaria** O. S.

A common species of the Canadian life-zone. "Psocid Glen," Aug. 26, 1910; four ♂'s; Aug. 30, 1911, common, both sexes. Woodworth's Lake; B. P. H. U. Swamp; Aug. 22, 1910.

51. **Amphinome triocellata** O. S.

Rare. Woodworth's Lake; B. P. H. U. Swamp, Aug. 22, 1910, one ♂ only.

52. **Amphinome indigena** O. S.

Common. Sacandaga Park; along the R. R. embankment, June 21, 1911. "Psocid Glen," Aug. 21, 1910. Canada Lake, June 24, 1911. Woodworth's Lake, Aug. 22, 1910; June 23, 1910.

53. **Amphinome tristigma** O. S.

Abundant, northern in distribution. Gloversville; Power-house Woods, common on ferns, etc., July 3, 1910. Woodworth's Lake, B. P. H. U. Swamp, Aug. 22, 1910.

54. **Cryptolabis paradoxa** O. S.

Abundant. Gloversville; Power-house Woods, July 3 and 17, 1909; abundant on low vegetation, such as ferns, etc. Sacandaga R.; Sport Is., July 5 and 25, 1909. Not rare on herb-

age growing amongst shrubbery. June 27, 1910, "Very common on the rank herbage of the northeast coast and specimens could be found in my net at every sweeping. Hundreds—if not thousands—of specimens about." June 21 and 28, 1911, common on Sport Is.

55. **Sacandaga flava** Alex.

Locally common.

Since describing the genus *Sacandaga* (Ent. News, Oct., 1911), I have come to the conclusion that the insect is most closely related to the genus *Rhabdomastix*, Skuse* of Australia. The differences between the two genera are rather numerous, but the resemblances, especially in the genitalia of the male and in the venation, are great, and it is possible that *Sacandaga* will, upon further study, be relegated to subgeneric rank. The genera should have been compared in the original description, but I was not in possession of Skuse's detailed description of *Rhabdomastix* at the time. This comparison is supplied in the following key:—

A.—Antennae very long, filiform, nearly twice the length of entire body. Wings cuneiformly narrowed towards the base, with only a slight indication of an anal angle. Halteres, long, slender. Venation: Sc rather short, tip of Sc1 remote from the tip of R1; Sc beyond origin of Rs, twice the length of the cross-vein *r-m*. Sc2 absent or indistinct at tip of Sc1. R2+3 (petiole of second submarginal cell of Osten Sacken) one-half of cell R2. Cross-vein *r-m* as long as the basal deflection of Cu1. Second anal short, curved .....**Rhabdomastix** Skuse.

AA.—Antennae normal reaching about to the root of the wings. Anal angle present and prominent. Halteres short, abruptly capitate. Venation: Sc long so that Sc1 and R1 are somewhat approximated at the tip; Sc long, beyond the origin of Rs, four times the length of the cross-vein *r-m*. Sc2 conspicuous, removed from the tip of Sc1. R2+3 equal in length to, or longer than, cell R2. Cross-vein *r-m* much shorter than the deflection of Cu1. Second anal prominent, bisinuate .....**Sacandaga** Alex.

*Diptera of Australia, by F. A. A. Skuse. Proc. of the Linnaean Society of New South Wales; vol. 4 (series 2nd) (25th Sept., 1889); P. 828, 829; Pl. 22, Fig. 15 (wing) Pl. 24, Fig. 57 (♂ genitalia).

Although the two species are almost antipodal in their respective ranges, it is not exceptionally remarkable to find such a distribution. Sport Island is the home of two other insects which are almost equally isolated from their near allies. The primitive crane-fly, *Protoplasa,* occurs here, and finds its only living relative (*Tanyderus*) in Chile and Australasia. The remarkable may-fly, *Siphlonisca aerodromia* Ndm. described from this island, finds its near relative in *Oniscogaster wakefieldi,* McLach., of New Zealand. The present occurrence, therefore, merely adds one more difficulty to the explanation of the geographical distribution of animals and plants.

1909—June 12, not rare on Sport Island; July 5, a few. 1910—June 27, male; Aug. 24. 1911—June 21, one male; June 28, several. Gloversville, Power-house Woods, July 3, 1909. Seasonal distribution, June 12-Aug. 24.

The species has been taken only on Sport Island, with the exception of a single specimen at Gloversville, and mainly on the east and northeast coasts, where it may be swept from rank herbage. The vegetation in the places where the species is commonest consists of a dense tangle of herbage, composed mainly of such plants as *Onoclea sensibilis, Osmunda claytoniana, Veratrum viride, Polygonatum biflorum, P. commutatum, Laportea canadensis, Actaea rubra, Cryptotaenia canadensis, Galium lanceolatum, Eupatorium urticaefolium, Solidago canadensis, S. rugosa, S. graminifolia, Rudbeckia laciniata* and *Helianthus decapetalus.* The whole undergrowth is thickly intertwined with creepers, such as *Smilax herbacea, Clematis virginiana, Menispermum canadensis, Celastrus scandens* and *Convolvulus sepium.* It is not common, as a rule, but in June several specimens can generally be taken by sweeping. On June 13, 1909, I found the species swarming and made the following observations:

The species came out at about 7.45 P. M. and at 7.51 P. M. began its flight in under an elm tree at the northeast end of the island. The flight was generally forward, but continually from side to side for a few inches. The flight was quite irregular, always toward the slight north breeze. The whole

swarm would often move away and return, a little later, to the first place. It swarmed within four feet of the ground, generally much lower, averaging, perhaps, two feet. The flight is so irregular that it is difficult to describe. The number of individuals participating in the swarm was about twenty. Other species swarming nearby at the same time were *Chironomus hyperboreus*, var. *meridionalis*, Joh., and the may-flies. *Ephemerella excrucians* Walsh, and *Siphlonisca aerodromia* Ndm.

Notes on Florida Thysanoptera, with description of a new genus.

By E. A. Back, Virginia Agric. Exper. Sta., Blacksburg, Va.

While in Orlando, Florida, engaged in a study of the Aleyrodid pests of *Citrus*, the writer collected several species of Thysanoptera upon which the following notes have been made.

Leptothrips aspersus Hinds.

This species previously recorded from Massachusetts, California and Barbados Island, was frequently found at all times of the year on both new and old *Citrus* foliage.

Scolothrips 6-maculatus Pergande.

The distribution of this species as given by Hinds is Missouri, Iowa, Wisconsin and Nebraska. It has been recorded by both Pergande and Bruner feeding on mites. Found feeding on red spider on *Citrus* and several weeds during Spring of 1909.

Heliothrips hemorrhoidalis Bouche.

This species, which has been spoken of as one of our worst greenhouse pests, was found specially abundant during the Fall of 1908 in colonies on the foliage of red maple (*Acer rubrum*).

Aleurodothrips fasciapennis Franklin.

This species is of special interest from an economic standpoint in that it preys upon both the citrus white-fly (*Aleyrodes citri*) and the cloudy-winged white-fly (*A. nubifera*). It has

been seen on several occasions by the writer to suck the juices of mature larvae and pupae of these insects and in one instance, during March, 1909, to find its way into a rearing cage and kill 95.5 per cent. of 163 eggs present on the leaf enclosed. Specimens may be found at almost any season of the year on *Citrus* foliage where they are especially fond of concealing themselves in the empty cocoons of *Chrysopa*. In an examination of several thousand *Citrus* leaves picked at random in groves in and about Orlando, during the fall of 1909, for the purpose of making white-fly counts, there was found an average of from two to three thrips per leaf—sometimes on an individual leaf as many as five thrips. While this thrips kills large numbers of white-fly larvae and pupae at certain times, it has not yet demonstrated itself to be of practical value in holding these pests in check.

Aeolothrips vespiformis Crawford.

During late February and March, and in less numbers during the late summer months a very conspicuous thrips was found running rapidly over the tender foliage of *Citrus*. It undoubtedly belonged to the Aeolothripidae and so closely resembled *Aeolothrips bicolor* Hinds, that the writer sent specimens to Dr. M. J. Franklin for comparison with the type material of *bicolor*. Upon making this comparison, Dr. Franklin found the Florida specimens distinctly different and in writing to that effect called attention to the description and figures of *Aeolothrips vespiformis* Crawford, which had just been published (Pomona Journal of Entomology, Vol. 1, Page 109), and had not been seen by the writer. The Florida specimens so closely agree with Crawford's description and figures (head, thorax, abdomen, wing and hind leg), that they represent either the same or a very closely allied species. Inasmuch as Crawford's description and figures were made from a single, very poorly preserved specimen and the Florida specimens show a certain range of variation, especially in regard to the number and relative position of the wing spines, the writer prefers to consider the species identical—at least until more specimens

from the habitat of the unique type, Nicaragua, are collected.

The differences, however, between *vespiformis* and the other species of the Aeolothripidae are sufficient to warrant the creation of a new genus. In all the other genera of this family thus far described, there are four or five cross veins in the fore wing. No cross veins are present in either Nicaragua (See Fig. 49C, Pomona Journal, Vol. 1, p. 111), or Florida specimens. Crawford, himself, recognized that the absence of cross veins present not only a specific difference but also a departure from the generic description of *Aeolothrips* given by Hinds. The following genus is proposed for this species:—

FRANKLINOTHRIPS new genus.

Head small, broader than long, rounded uniformly anteriorly, distinctly retracted into prothorax. Eyes prominent; ocelli present and large in size. Antennae slender, nine segments represented. Prothorax strongly rounded broader anteriorly than posteriorly, and broader than long; spines weak and inconspicuous. Wings well developed; fore wing with two well developed longitudinal veins without cross veins; veins and costa with prominent spines.

Type.—Aeolothrips vespiformis Crawford.

Although Crawford made his description and drawings from a poorly preserved specimen, one can readily identify the species by referring to his work, and taking into consideration the following additions and comments. In examining the live specimens, one is attracted by the rapidity with which the species runs. It was never seen to jump. Living color note as follows: Head and thorax purplish black, abdomen purplish black polished, basal segments lemon yellow, the basal third of following segment reddish black; tip of abdomen pale yellow. Antennae black, basal three segments whitish, with slight yellowish tinge, remaining segments pale at both extremities. Legs blackish, the femora by transmitted light show reddish and at base and on distal portion yellowish. Wings extend a trifle beyond sixth segment.

The antennae which are missing in the type specimen of *vespiformis* are long, slender, nine segmented; the relative length of segments which average about one space in width, is as follows: 1, 3 spaces; 2, 3.5; 3, 14.3; 4, 9; 5, 15.5; 6, 4.7; 7, 4; 8, 2.4; 9, 1 space. Segments clothed with sparse weak bristles.

The Florida specimens show two instead of one bristle between antennae and eye, and six instead of two on sides of head between eye and prothorax.

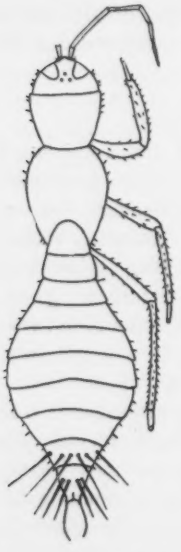


Fig. 1.—*Franklinothrips vespiformis* Crawf.

Fig. 2.—*F. vespiformis* Crawf., antenna.

Fig. 3.—*F. vespiformis* Crawf. (*a*), hind leg; (*b*), front leg.

Mesothorax with four weak lateral bristles on anterior half.

All the legs are long and slender, moderately clothed with short weak bristles, those at tip of tibiae stronger.

Wings as described, but no reliance can be placed on number of spines on either margin or veins as the spines vary in number and even in location in different specimens. The por-

tion of the veins on the clear central area more often without than with spines.

In some specimens the abdomen expands laterally until at its widest point at the sixth segment, it is fully twice as wide as at base. Two instead of one lateral spine on fourth and fifth segments as well as on sixth and seventh; eighth segment with three lateral spines of which the central one is longest. Ninth segment with four dorsal and two lateral long conspicuous bristles and three short inconspicuous lateral ones. Tenth segment with four long dorsal bristles and two terminal bristles of nearly equal length. It is more than probable that these differences in the number of spines are due to the dilapidated condition of the type specimen.

A new species of Dicaelus from Arkansas (Coleop.).

By W. S. Blatchley, Indianapolis, Indiana.

While looking over the Bolter collection of Coleoptera, now in possession of the State Laboratory of Natural History at Urbana, Illinois, I was struck by the much greater size of two specimens from Hot Springs, Arkansas, placed with *Dicaelus sculptilis* Say. At first I passed them by with a mere comment on their size to my companion, Mr. Walter S. Abbott, now in charge of the collection. Happening to open the same box on the following day I removed one of the Arkansas specimens and was surprised to find the sculpture of the elytra differing greatly from that of *sculptilis* by its side. Careful examination revealed other notable differences, so I borrowed the specimen for a few weeks and submitted it to that well known Coleopterist, Charles W. Leng, of New York City. He coincided with my opinion that "characters other than size were sufficient to differentiate it from *sculptilis*," and that he regarded it as *Dicaelus* n. sp. I therefore herewith describe it under the name of

Dicaelus ocellatus sp. nov.

Elongate oval, broad and robust. Black, not at all shining above, feebly shining below, the legs more so; antennae piceous. Head as

in *sculptilis* but much wider. Thorax subquadrate, base one-fifth wider than apex, sides feebly curved, the basal third almost parallel; margins less flattened and disc much less uneven than in *sculptilis*, the surface marked with fine transverse wavy lines, median line very fine, entire. Elytra with the alternate intervals broader, less convex, each with an irregular row of 10 to 12 large ocellate punctures; striae very finely punctate, the rows of punctures strongly sinuous on apical half; humeral stria strong, reaching three-fourths to apex.

Measurements; male, length 24 mm.; width of elytra at base 10 mm.; female, length 26 mm.; width of elytra at base 12 mm. Of *sculptilis*, (inserted for comparison) length 17-19 mm.; width of elytra at base 7.5 mm.

One pair in Bolter collection labeled "H. Springs, Ark., 10-6."

From *sculptilis*, which it resembles only in the curious sculpture of the elytra, *ocellatus* differs in the much greater size, it being slightly longer and much wider and more robust than the rather common *D. purpuratus* Bon. The upper surface of *sculptilis* is distinctly shining, of *ocellatus* wholly opaque. The basal depressions and median line of thorax of *sculptilis* are much deeper and the surface of the basal half therefore much more undulating than in *ocellatus*. Finally the elytral sculpture, though at first glance resembling *sculptilis*, is very different, the intervals containing the ocellate punctures being wider and much less broken and distorted, the punctures themselves larger and mostly placed along the middle of the interval, whereas in *sculptilis* they are at one side or in the striae. The rows of fine punctures of the striae are more distinct and on the basal halves much less sinuous in *ocellatus* than in the other species.

It is strange that so large and striking a species as *ocellatus* has heretofore been overlooked. It is, of course, possible that it is in a number of collections, as in that of Bolter, confused with *sculptilis*. Its range may also be found to be very limited in area. While Say does not give the length of *sculptilis* in his original description, the form and size of his figure and the details of the elytral sculpture there shown, prove that he had before him the form now widely known as that species and not the one above described.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, four weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form and without covers, will be given free, when they are wanted; if more than twenty-five copies are desired, this should be stated on the MS. The receipt of all papers will be acknowledged. Proof will be sent to authors for correction only when specially requested.—Ed.

PHILADELPHIA, PA., FEBRUARY, 1912.

The Christmas week meetings of Entomologists in Washington, in affiliation with the American Association for the Advancement of Science, were felt by those in attendance to have been a decided success. Both the Entomological Society of America and the American Association of Economic Entomologists met in the same room in the top (fourth) story of the United States National Museum, near the quarters of the Department of Insects, the Society on Tuesday morning and afternoon, December 26, and Wednesday morning, December 27; the Association on Wednesday afternoon, Thursday and Friday, December 27 to 29.

Twenty-three papers were listed on the printed program of the Society, at least four of which were not given owing to the absence of their authors or to the lack of time at the disposal of the Society, which has not yet applied a time limit to papers presented, as was suggested in the NEWS for November last. As it is planned to publish in *Science* brief abstracts of the papers given, and as the program and many of the papers themselves will also appear in the *Annals*, the program will not be printed in the NEWS. The Annual Public Address of the Society was given by Prof. J. H. Comstock, on Wednesday evening, December 27, in the auditorium of the Cosmos Club. The topic selected, "On Some Biological Features of Spiders—

The Evolution of the Web," was most interestingly treated with the aid of lantern slides, which included a number of excellent photographs of what were termed by the speaker nests and webs "made to order."

The program of the Association included many reports of committees on important features of the work of Economic Entomologists, the Annual Address of the President, Mr. F. L. Washburn, State Entomologist of Minnesota, and some twenty-nine papers, formal provision being made for the discussion of many of the latter. Proper appreciation of these will be gained only from the *Journal of Economic Entomology*, in which the proceedings will appear ***in extenso***.

A most enjoyable smoker was tendered by the Entomological Society of Washington to visiting entomologists on Friday evening, December 29, at the Saengerbund Hall. Somewhat over one hundred gathered around the tables here and "Section Q" was called to order by the Dean of the Washington Society, Mr. E. A. Schwarz. Mr. W. C. O'Kane, of Durham, New Hampshire, as toastmaster, called for remarks from both visitors and hosts, and the evening passed in personal intercourse, which is the most valuable part of these national meetings.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

A BROMELIADICOLOUS CADDIS-WORM.—Mr. Morton's note on this topic in the NEWS for November, 1911, page 411, recalls Fritz Müller's paper "Sobre as casas construidas pelas Larvas de Trichopteros da Provincia de Santa Catharina"—(Arch. Museu Nac. Rio de Janeiro III, p. 99-134, 209-214, 1880) in which he says (page 114): "encontra-se emfin, nutrindo-se daquelles restos vegetaes mais on menos apodrecidos ou transformados em humus, uma multidao de animaes terrestres e aquaticos; Planarias (Geoplana) Hirudineas (Clepsine) Oniscos, Centopeias, Formigas, larvas de dipteros, de Lavadeiras, Pererecas, etc." Among these he found a larva of a Trichopter, which he describes farther on (p. 131) as *Phylloicus bromelia um.* He does not mention any Odonate larvæ.—NATHAN BANKS, East Falls Church, Virginia.

NOTES ON WESTERN U. S. LEPIDOPTERA.—*Erebus odoratus* L.—On Aug. 10, 1911, I took a worn and battered specimen of this moth at Palo Alto, California, 30 miles south of San Francisco. On the 9th of July, while in Nevada, I saw a large, black moth, which must have been this species, fluttering about the door of a cabin, just before dusk. The moth, as far as I was able to see, was in good condition. The cabin is in a small canyon about 30 miles north of Reno, the surrounding country being practically a desert.

Vanessa californica Bdv.—I noticed a remarkable abundance of the caterpillars of this species in the Sierra Nevada Mountains, during the past July and August. They were feeding on "buck brush" (*Ceanothus* sp.) for the most part. The newspapers state that the butterflies have since become very numerous, and bothersome to travellers. The butterflies have been quite common at Palo Alto during October. Ordinarily they are rare here.

Lemonias mormo Feld.—This species should be added to my "Butterflies of the Lake Tahoe Region," Ent. News. xxi, pp. 274-277, 309-317, 1910. I took a number of specimens near Deerpark, at elevations of 7,000 to 8,000 feet, during the latter part of August, 1910. The season of 1910 was very early, and I suppose ordinarily the species would not appear until September. I also took *Chrysophanus mariposa* and *Lycaena shasta* near Deerpark (7,500-8,000 feet). I have already recorded these from Glen Alpine.—E. J. NEWCOMER, Palo Alto, Cal.

A CASE EITHER OF SECONDARY OR DOUBLE EGG PARASITISM.—In early July, 1911, Mr. Henry H. Severin sent to me a large number of the parasitized eggs of *Cimbex americana* Leach in the leaves of willow. After several days, these gave forth large numbers of (*Pentarthron*) *Trichogramma minutum* Riley and a single proctotrypid. Upon their receipt, a few of the eggs had been isolated in vials and when they were examined later, in one case a third species of parasite was found to have emerged—a male eulophid of the Entedoninæ. Observation of the parasitized host egg in this case revealed also about a half dozen pupae of the *Trichogramma*, all in a compact mass on one side of it; the remaining part of the egg was clean and smooth somewhat like a pupal cavity and was doubtless occupied by the pupa of the eulophid. No adults of the *Trichogramma* issued from it and the pupæ observed were dead. Before the egg cavity had been disturbed, a single exit hole had been observed at one side of the center over the space doubtless occupied by the eulophid. Here, we have either a case of secondary or else double parasitism in the egg; and the former seems to me the more likely, from the nature and habits of the Eulophidæ, and also because of the fact that a large number of the *Trichogramma* seemed to have been killed, a larger number than would seem to be necessary for the survival of the eulophid, if the

case was that of double parasitism only. Whatever its nature, it seems worthy of record but it is not unique for egg parasites. The eulophid was seemingly *Nesomyia cimbicis* Brues, male, but the abdominal petiole was very long and the parapsidal furrows apparently complete or nearly, at least slender grooved lines. Its antennæ were in fragments and at the time I could not give the specimen enough attention to insure its identity. The locality was Milwaukee, Wis., June 30, 1911. It is worth recording, in this connection, that as many as thirty or more individuals of the trichogrammatid came to maturity in some of the isolated eggs of the Cimbex.—A. A. GIRAULT.

RHYNCHITES BICOLOR.—This beetle is common in New Mexico and Colorado, often damaging roses. When at Woods Hole, Mass., last July, I found it equally common there, but somewhow the beetles did not look right, so I brought some home for comparisons. It appears that the Colorado insect, as compared with that from Woods Hole, is distinctly smaller, of a lighter shade of red, with the elytra less coarsely sculptured, and without the rows of evident coarse punctures. Also, I find the head entirely black, whereas it is largely red in the Woods Hole insect. I consulted Professor H. F. Wickham about this and he kindly informed me of Le Conte's three "races," of which α from Oregon and California, is probably the same as my Colorado insect. As Professor Wickham knows of no available name, and I have found none, I propose to call the Colorado insect *Rhynchites bicolor wickhami*, taking as the type one from Boulder, Colorado, collected by myself on rose in June. It is surely not more than a subspecies or race, but I think valid as such.—T. D. A. COCKERELL, Boulder, Colorado.

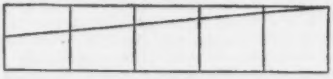
SPHAERIDIUM SCARABAEOIDES.—This beetle has reached Colorado; I took one on the University campus at Boulder, October, 1911. Blatchley, in his Coleoptera of Indiana, says there are no striae on the elytra, but in my specimen there are weak widely spaced striae. Professor Wickham has kindly examined his material (from Canada, Rhode Island, Illinois and Iowa) and finds the same striae, more distinct in some than in others.—T. D. A. COCKERELL, Boulder, Colorado.

YELLOW APHID-INFESTING SPECIES OF APHELINUS DALMAN.—Apropos of yellow species of *Aphelinus* Dalman which infest aphids, I have happened upon several instances in addition to the one recently published by me (The Entomologist, London, 1911, p. 178), and think it desirable that they be recorded. Mr. J. J. Davis sent me the material in both instances. This was several years ago and only recently did I have occasion to examine it. In some vials of alcoholic material—aphid parasites—I found two which contained a female specimen each of a yellow *Aphelinus* together with the host aphid, the latter in each instance bearing the characteristic exit-hole made by the parasite. The specimens, however, were found to be in too bad condition for specific

identification though they appeared to be the same species, and both resembled in general coloration *Aphelinus automatus* Girault, the only yellow aphid-infesting species so far known and the one referred to above. One of these specimens was found to have been reared from *Callipterus ulmifolii* on Elm, Morton Grove (Chicago), Ill., August 5, 1909, while the other was obtained from the same host, collected at Oak Park (Chicago), Ill., August 12, 1909, and emerging the fourteenth of August following. I now know of a third (or rather fourth) instance, the rearing from a *Calaphis* at St. Louis, Mo., by Mr. Davis very recently of a specimen of a species altogether different from *automatus* and consequently unknown to science. This species has been turned over to Dr. L. O. Howard, who has done so much to further our knowledge of the Aphelininæ.—A. A. Girault.

A New Measuring Device.—In making accurate comparison of the proportions of the elements of the venation in the published illustrations of insect wings the writer hit upon a very simple device which may be of use to others.

Place a small piece of transparent celluloid upon the figure and scratch the design upon the celluloid, now carefully trim around the outside line and there is left a rectangle 1 cm. wide and 5 cm. long marked off into square centimeters, each cross line being divided by



the oblique line giving 4-6, 3-7, 2-8 and 1-9 mm. respectively.

By laying this device upon a drawing one can quickly determine the length of any line up to 1 cm. in length to the tenth of an mm. by estimating the tenths of the intervals between the cross lines. The rule may be read the long way with lessened accuracy but equal facility.

After rather extensive use the writer finds it very much more convenient and quite as accurate as the use of bow dividers or of any other method that has come to his notice.—C. W. Woodworth, University of California, Berkeley, California.

Aletia argillacea.—The note in the November number of Entomological News *in re* the abundance of *Aletia* (*Alabama*) *argillacea* has just come to my attention. I am very much interested in the "migration" you note, as a similar "migration" occurred in Milwaukee at about the same time. I first noticed the moth in the streets of this city, right in the center of the town, and increasing in numbers in the direction of the lake (Lake Michigan). I did not make a note of the first appearance of the moth, but a specimen which I picked up for a record bears the

date September 20th. From that date until October 7th, I saw the moths nearly daily, but the height of the "Migration" seems to me to have been about September 28-30. At night thousands of the moths could be seen flying around the electric lights and quite a number flew into my room to the lamp.

It would be of interest to know whether the swarm in Milwaukee constituted a separate migration or whether it had merely separated from that which wended into Philadelphia. At any rate, this much seems certain to me: the swarm followed the shore line of Lake Michigan. I remember determining a specimen of the species for a gentleman in Kenosha a week ago; Kenosha also lies at the shore. Further, one of the Museum staff brought me two specimens from Lake Okauchee, Waukesha Co., about 20 miles west from here, which would indicate that the swarm was not confined to the immediate shore line. The latter specimens bear the date October 3rd.

I have written to my friend, Mr. Gerhard, at the Field Museum, in Chicago, to see whether he knows anything of the matter. I shall also write to several correspondents in Wisconsin and see whether I can learn similar observations from them. The species is by no means rare in Milwaukee. I have repeatedly taken it on sugar and at the electric lights.—R. A. MUTTKOWSKI, Public Museum, Milwaukee, Wis.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in Heavy-Faced Type refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (*) following a record, denotes that the paper in question contains description of a new North American form.

For record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

4—The Canadian Entomologist. **5**—Psyche, Cambridge, Mass. **7**—U. S. Department of Agriculture, Bureau of Entomology. **9**—The Entomologist, London. **10**—Nature, London. **11**—Annals and Magazine of Natural History, London. **13**—Comptes Rendus, Societe de Biologie, Paris. **18**—Ottawa Naturalist. **22**—Zoologischer Anzeiger, Leipzig. **35**—Annales, Societe Entomologique de Belgique. **40**—Societas Entomologica, Zurich. **62**—Handlingar, Konglige Svenska Vetenskaps-Akademiens, Stockholm. **84**—Entomologische Rundschau. **86**—Annales, Societe Entomologique de France, Paris. **92**—Zeitschrift fur wissenschaftliche Insektenbiologie. **97**—Zeitschrift fur wissenschaftliche Zoologie, Leipzig. **143**—Ohio Nat-

uralist. **153**—Bulletin, American Museum of Natural History, New York. **160**—Internationale Revue der Gesamten Hydrobiologie und Hydrographie, Leipzig. **166**—Internationale Entomologische Zeitschrift, Guben. **179**—Journal of Economic Entomology. **182**—Revue Russe d'Entomologie, St. Petersburg. **189**—Pomona Journal of Entomology, Claremont, Cala. **193**—Entomologische Blatter, Cassel. **197**—Proceedings, Royal Society, Biological Sciences, London. **198**—Biological Bulletin, Marine Biological Laboratory, Woods Hole, Mass. **234**—Records, Indian Museum, Calcutta. **275**—Philippine Journal of Science, General Biology, Manila. **285**—Nature-Study Review, Urbana, Illinois. **305**—Deutsche Entomologische National-Bibliothek, Berlin. **321**—Annals of the New York Academy of Sciences. **336**—Board of Agriculture, Trinidad. **346**—Fauna Exotica. Mitteilungen aus dem Gebiete der exotischen Insektenwelt, Frankfurt am Main. **354**—The Condor: a Magazine of Western Ornithology, Los Angeles. **355**—Smithsonian Institution Report, Washington, D. C. **356**—Nevada Agricultural Experiment Station, University of Nevada, Reno. **357**—Annual Report of the Department of Agriculture, Washington, D. C. **358**—Boletim do Museu Rocha, Ceara, Brazil. **359**—Connecticut Agricultural Experiment Station, New Haven. **360**—"Timehri," the Journal of the Royal Agricultural and Commercial Society of British Guiana, Demerara. **361**—Atti della Societa Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano, Pavia.

GENERAL SUBJECT. Britton, W. E.—Vacation notes in the Adirondacks, **179,** iv, 544-545. **Bryant, H. C.**—The relation of birds to an insect outbreak in Northern California during the spring and summer of 1911, **354,** xiii, 195-208. **Cockerell, T. D. A.**—Scudder's work on fossil insects, **5,** 1911, 181-186. **Howard, L. O.**—Report of The Entomologist for 1911, 42 pp., **357,** 1911. **Kusnezov, N. J.**—Sur quelques methodes des investigations entomologiques (Russian). **182,** xi, 124-137. **Kuster, E.**—Die gallen der Pflanzen, ein lehrbuch fur Botaniker und Entomologen, Leipzig, 1911, 437 pp. **McCook, Rev. Henry C.**—Biographical notices (by various authors). Journal of The Presbyterian Historical Society, Vol. VI, No. 4, Dec., 1911, pp. 97-150. **Mallock, A.**—Note on the iridescent colours of birds and insects, **197,** Ser. A, 1911, 598-605. **Rocha, F. D.**—Insectos (of Ceara, Brazil), **358,** i, No. 2, 34-38. **Sanderson, E. D.**—Preliminary report of the Committee on Entomological Investigations, **179,** iv, 536-543. **Scudder, S. H.**—Biographical sketch by J. S. Kingsley, **5,** xviii, 175-178. **Sheldon, W. G.**—Formalin a remedy for mould on cabinet specimens, **9,** 1911, 391-392. **Shelford, V. E.**—Ecological succession. III. A reconnaissance of its cause in ponds with particular reference to fish, **198,** xxii, 1-38. **Urich & Guppy.**—Prelim-

inary notes on some insects affecting the cocoanut palm, **336,** Circ. No. 5, 30 pp. **Webster, R. L.**—Insects of the year 1911 in Iowa, **179,** iv, 524-527.

APTERA AND NEUROPTERA. Dogiel, V.—Studien uber die entwicklungsgeschichte der Pantopoden. Nervensystem und drusen der Pantopodenlarven, **97,** xcix, 109-146. **Holmgren, N.**—Termitenstudien. 2. Systematik der Termiten. Die familien Mastotermitidae, Protermitidae und Mesotermitidae, **62,** Bd. 46, No. 6, 86 pp. **Karny, H.**—Neue Phloeothripiden-genera, **22,** 1911, 501-504. Revision der gattung Heliothrips, **84,** xxviii, 179-182. **Wesenberg-Lund, Dr.**—Biologische studien ueber netzspinnende, campodeoide Trichopterenlarven, 64 pp., **160,** Biol. Sup., Ser. III, Heft 1.

ORTHOPTERA. Davis, W. T.—Notes on two Conocephalids, **4,** 1911, 413. **Griffini, A.**—Studi sui Grillacridi del k. Zoologisches Museum di Berlino, **361,** l, 187-246. **Morse, A. P.**—The Orthopterological work of Mr. S. H. Scudder, with personal reminiscences, **5,** 1911, 187-192.

HEMIPTERA. Crawford, D. L.—American Psyllidae. V, **189,** iii, 628-632 (*). **Davidson, W. M.**—Two new aphids from California, **179,** iv, 559-562 (*). **Essig, E. O.**—Aphididae of So. California, VIII. Plant lice affecting the citrus trees (natural enemies and remedies), **189,** iii, 586-619 (*). **Pierantoni, V.**—Larven-hermaphroditismus von Icerya purchasi, **92,** vi, 322-323. **Quayle, H. J.**—Scale insect parasitism in California, **179,** iv 510-515. **Sulc, K.**—Ueber respiration, tracheensystem und schaumproduktion der schaumcikadenlarven (Aphrophorinae), **97,** xcix, 147-188. **Yothers, M. A.**—Perillus claudus a beneficial insect, **4,** 1911, 418.

LEPIDOPTERA. Britton, W. E.—The Pyralid (Omphalocera dentosa) a pest of barberry hedges, **179,** iv, 521-524. **Britton & Cromie.**—The leopard moth (Zeuzera pyrina), **359,** Bul. No. 169. **Champion, H. G.**—Unusual dates of occurrence and emergence of Lepidoptera in 1911, **9,** 1911, 405. **Conte, A.**—Recherches experimentales sur l'accouplement et la ponte chez le Bonbyx mori, **13,** 1911, 549-551. **Druce, H.**—Descriptions of some n. sp. of Heterocera, mostly from Tropical So. America, **11,** viii, 716-720. **Fassl, A. H.**—Die vertikale verbreitung der Lepidopteren in der Columbischen Central-Cordillere, **346,** i, 29-30. **Felt, E. P.**—Codling moth, pp. 237-251, Bul. 28, Dept. Agric., Sta. of New York, 1911. **Field, W. L. W.**—Doctor Scudder's work on the Lepidoptera, **5,** xviii, 179-180. **Frohawk, F. W.**—Life-history of Anosia plexippus, **9,** 1911, 377-382. **Fruhstorfer, H.**—Neue Papilioniden aus meiner sammlung, **84,** xxviii, 178-179. **Fyles, T. W.**—Gnorimoschema septentrionella n. sp., **4,** 1911, 422 (*). **Gibson, A.**—Abundance of the cotton moth in Ontario, **18,** 1911, 129-130. **John, O.**—Sur le "nouveau cours" en lepidopterologie (Russian), **182,** xi, 71-79. **Linstow, Prof.**—Die

brennhaare der spinnerraupen, **166,** v, 241-243. **Lyman, H. H.**—Notes on the No. Am. species of Grapta in the Br. Museum, **4,** 1911, 418-421. **Prout, L. B.**—New species of Geometridae, **11,** viii, 702-711. **Sheldon, W. G.**—Description of ova and young larva of Chrysophanus amphidamas, **9,** 1911, 399. **Stechel, H.**—Ueber Melanismus und Nigrismus bei Lepidopteren, **92,** 297-302 (cont.). **Walsingham, Lord.**—Biologia Centrali-Americana Heterocera, Vol. IV, pp. 41-112 (*). **Wheeler, G.**—The Athalia group of the genus Melitaea. **9,** 1911, 382-385 (concluded). **Wolley-Dod, F. H.**—Further notes on Alberta Lepidoptera (cont.), **4,** 1911, 393-399.

DIPTERA. Anon.—Tsetse-flies and sleeping sickness, **10,** 1911, 149. **Alexander, C. P.**—Synonymical and other notes on the Tipulidae, **5,** 1911, 192-203 (*). **Annandale, A.**—Synonymy in Corethrinae, **234,** iv, 317-320. **Bezzi, M.**—Eine seltene fliege von Weltverbreitung, **40,** xxvi, 65-67 (cont.). **Coker, W. C.**—The necessity of water for flies, **285,** vii, 277-278. **Corti, E.**—Di alcuni organi ghiandolari che si trovano nelle zampe di parecchi Ditteri, **361,** l, 173-186. **Felt, E. P.**—New species of gall midges, **179,** iv, 546-559 (*). **Metcalf, C. L.**—Life-histories of Syrphidae, II, **143,** 1911, 397-405. **Moore, H. W. B.**—Blood-sucking flies other than mosquitoes, **360,** i, 255-259. **Wise, K. S.**—The Simulidae of British Guiana, **360,** i, 248-254.

COLEOPTERA. Bowditch, F. C.—Further notes on Diabrotica. No. II, **4,** 1911, 415-417. **Burgess, A. F.**—Calosoma sycophanta: its life history, behavior, and successful colonization in New England, **7,** Bul. No. 101, 94 pp. **Cushman, R. A.**—Notes on the host plant and parasites of some N. A. Bruchidae, **179,** iv, 489-510. **Fleutiaux, E.**—Revision des Trixagidae Melasidae et Elateridae des Antilles francaises, **86,** 1911, 235-264. **Gebien, H.**—Coleopterorum catalogus, Pars 37: Tenebrionidae IV: Trictenotomidae, pp. 387-742. **Gillet, J. J. E.**—Lamellicornes Coprophages nouveaux ou peu connus, **35,** 1911, 315-319. Coleopterorum Catalogus, Pars 38: Scarabaeidae: Coprinae I, 100 pp. **Kerremans, C.**—Monographie des Buprestides, Tome V, Livr. 17-18. **Lameere, A.**—Revision des Prionides, **35,** 1911, 325-356. **Leng, C. W.**—The species of Brachyacantha of No. and So. America, **153,** xxx, 279-333 (*). **McDermott, F. A.**—Some further observations on the light-emission of American Lampyridae: The photogenic function as a mating adaption in the Photinini, **4,** 1911, 399-406. **Pliginski, V. G.**—Notice sur un caractere chez les representants du genre Meloe, **182,** xi, 44-47. **Sharp & Champion.**—Biologia Centrali-Americana. Rhynchophora: Curculionidae, Vol. IV, pt. 3, pp. 169-312; pt. 7, pp. 151-221 (*). **Singh & Maulik.**—Nature of light emitted by fireflies, **10,** 1911, 111. **Sokolar, Dr.**—Die flugeldecken-skulptur der Caraben, **305,** ii, 175, 179-180. **Strohmeyer, H.**—Neue Platypodiden aus Ost- und West-Afrika, Madagaskar und Peru, **193,** 1911, 222-234.

HYMENOPTERA. Cameron, P.—On the Hymenoptera of the Georgetown Museum, Br. Guiana, Part II, **360,** i, 306-330. **Cockerell, T. D. A.**—Descriptions and records of bees.—XL, **11,** viii, 763-770 (*). **Cornetz, V.**—Das problem der ruckkehr zum nest der forschenden Ameise, **92,** vi, 312-316 (cont.). **Crosby, C. R.**—A new species of Derostenus (Chalcidoidea), **4,** 1911, 414 (*). **Doten, S. B.**—Concerning the relation of food to reproductive activity and longevity in certain Hymenopterous parasites, **556,** Tech. Bul. No. 78, 30 pp. **Girault, A. A.**—Miscellaneous notes on the Hymenoptera Chalcidoidea: the genus Arthrolytus; Horismenus microgaster, **4,** 1911, 407-413. **Kieffer, J. J.**—Etude sur les Evaniides exotiques du British Museum de Londres. Description d'un nouveau genre et de deux nouvelles especes de Stephanides, **86,** 1911, 151-234. **Lozinski, P.**—Ueber einen eigentumlichen nestbau von Osmia bicornis, 92, vi, 316-322. **Lyle, G. T.**—Stridulation in the pupa of an Ichneumonid, **9,** 1911, 404. **Pearse, A. S.**—On the habits of Thalassina anomala, **275,** vi, 213-215. **Roubaud, E.**—The natural history of the solitary wasps of the genus Synagris, **355,** 1910, 507-525. **Schulz, W. A.**—Grabwespen-typen Tourniers, Brulles, Lepeletiers und Schenks, **40,** xxvi, 67-68. **Wheeler, W. M.**—Three new ants from Mexico and Central America, **5,** 1911, 203-208 (*). A list of the type species of the genera and subgenera of Formicidae, **321,** xxi, 157-175.

IER CONGRES INTERNATIONAL D'ENTOMOLOGIE. Bruxelles, Aout 1910. Volume II, Memoires Bruxelles, Hayez, Imprimeur des Académies Royales 30 Octobre, 1911.

This large octavo volume of 520 pages and 27 black and white plates reached us in the last days of December, 1911. It contains forty-nine memoirs by forty-one authors in German, English, French, Spanish and Italian. The titles have already been published in the NEWS for October, 1910, pages 377-381. An accompanying slip announces that Volume I, containing the proceedings of the sessions of the Congress, will appear in the beginning of 1912.

CONTRIBUTIONS TO THE NATURAL HISTORY OF THE LEPIDOPTERA OF NORTH AMERICA. Vol. I, No. 1, Revision of the Cossidae. No. 2, Revision of the Lasiocampid Genus Gloveria and its allies. By William Barnes, S.B., and J. H. McDunnough, Ph.D., Decatur, Illinois.

These papers may be obtained from the authors. The price of the Cossidae is $1.50 and of the Lasiocampidae $1.00.

These moths, owing to lack of figures and careful study, were in an unsatisfactory condition and the authors are to be congratulated on the careful work they have done. In the Cossid paper there are seven plates and many figures, and in the Lasiocampid paper four plates.

The generic relations of the species have been studied and put on a firmer foundation. Specific variation of venation has not been used for generic separation, nor secondary sexual characters. The photographic reproductions are excellent. There are some slight faults owing to photographic limitations, but they are not material, as the figures are sufficiently exact for determination, the majority of the figures being very exact reproductions. The name forma is italicized on plate two in the second part, "*G. arizonensis forma dolores*," while in the body of the work the name is treated as a synonym. The word "forma" is put in italics as a part of the name of the insect, which is evidently incorrect.

We hope the authors may be able to continue the "Contributions," as it is studies of this kind that collate our knowledge and place it on a much firmer foundation.—H. S.

Doings of Societies.

THE PACIFIC COAST ENTOMOLOGICAL SOCIETY.

The Thirty-seventh regular meeting was held on the evening of August 20, 1910, at 1801 O'Farrell street, San Francisco, Cal. President Van Dyke in the chair. Ten members and ten guests were present.

President Van Dyke reported the whereabouts of several absent members, namely: Miss Julia Wright, in Oregon; Karl R. Coolidge and Mr. Wm. Mann, collecting in Arizona.

Mr. James Cottle reported a collecting trip in July, 1910, to Castella, Siskiyou Co., California. He stated that there were no *Lycaenae*; the milk weeds were all past blooming and dry; and *Parnassius* were absent, although they were said to be abundant on meadows near Echo Lake. Four *Papilio daunus* were taken. No *Sphinx sequoia* were seen, and but five specimens of *Sphingidae* were taken at the Evening Primrose.

Mr. Huguenin stated that on August 14, 1910, while collecting at Fairfax, Marin Co., California, he captured a series of *Rosalia funebris*. The time is two months later than the regular time as heretofore reported. They were taken from the trunks of the California Laurel (*Umbellularia californica*).

Dr. Van Dyke stated that *Rosalia funebris* breeds in ash

(*Fraxinus oregona* and *dipetala*) in Washington, according to Prof. O. B. Johnson, while it breeds in California Laurel in this State. Mr. J. F. Killeen said that it also breeds in maple (*Acer macrophyllum*). Mr. Nunenmacher stated that the species is very abundant at Irvington, Alameda Co., California, and that it comes to the light.

Dr. Creighton Wellman stated that he had been working regularly, since the last meeting of the Society, on the *Meloidae* of East India, and that he had received the material from museums and private collections. Mention was also made of the faunal regions covered by his studies.

Dr. Van Dyke stated apropos of Dr. Wellman's remarks, that from some observations which he had made upon various species from the Sonoran, the Mediterranean and Aral-Caspian basin, and the Australian regions, he had come to the conclusion that the more typical part of the fauna of these three dry regions had a common origin, and the faunae therefore were not secondary to their adjacent tropical regions, but were of equal standing with them, and to a very great extent independent.

Dr. Wellman then stated that *Zonitis* and *Lytta* are the most primitive genera of the *Meloidae*.

Mr. J. F. Killeen made remarks on *Coccinella trifasciata* and *Adalia bipunctata*. He further stated that he had been experimenting on ants. These pests were trapped with bouillon poisoned with arsenic or strychnine.

Prof. W. B. Herms, of the Entomological Department of the University of California, being called upon, stated that he was interested in the sensory reactions of organisms to stimuli; and that he was working in Medical Entomology, studying the distribution of *Anopheles*, and their reactions.

Mr. J. C. Bridwell, recently from Oregon, and a Hymenopterist, being called upon, said that what little collecting he had done in California showed that there was a great variation in the species, and he considered that there was great need of rearing insects, in order to study variations, as we have too many species listed. He believed that we should rear

species from different localities and under the same conditions, and cited the tent-caterpillar as an example.

Mr. Nunenmacher said that the tent-caterpillar of Arizona was most interesting, as it never leaves its tent.

Percy Baumberger reported the results of a month's collecting, from June 15th to July 15th, at St. Helena, Napa Co., California, in the previous year. About a hundred species of Coleoptera were taken, not including any of the electric light material and Staphylinidae. He reported also that he had explored a cave; it was a long and narrow one, which wound around and descended in a serpentine manner. The walls were of clay, over which ice cold water ran. The cave was explored for about a mile, but he was unable to go any farther, because the passage was too small. Three beetles were caught, all light yellow and almost transparent. These were lost, except the elytron of one. A number of small centipedes and the remains of *Necrophilus hydrophiloides, Promecognathus laevissimus* and *Pterostichus caligans* were found.

The names of Prof. W. B. Herms, J. C. Bridwell and R. F. Sternitzky were proposed for membership and were duly elected.

Dr. Blaisdell stated that the Thirty-sixth Meeting or Field Day of the Society was not held in May, 1910, on account of the Society not deciding on a suitable place at the Thirty-fifth Meeting.

Adjournment. Refreshments were served.

The Thirty-eighth Meeting was held on the evening of December 3, 1910, at the Toke Point Grill, San Francisco. President Van Dyke in the chair. Eleven members and three guests were present.

Under new business it was voted to raise the dues to $1.00 a year, in order to accumulate funds for publishing the Proceedings of the Society at the end of each year.

Dr. Blaisdell read a paper on the "Variations in the Maculation of *Olla abdominalis*, and Observations on the Hibernating Habits of *Cicindela senilis*.

Mr. Nunenmacher supplemented the paper with other inter-

esting observations on the variations in the maculation of *Olla abdominalis.*

Mr. J. C. Bridwell gave an interesting talk on the habits, characters and distribution of an interesting group of Hymenoptera, with exhibition of the species.

Mr. Chas. Fuchs made remarks on his generic collection of *Cicindelidae* and *Carabidae,* with exhibition of his generic series.

Mr. J. E. Cottle exhibited and made remarks upon an interesting specimen of *Pyrameis* near *mulleri.*

Mr. F. W. Nunenmacher then referred to his studies on *Scymnus* with exhibition of the following species of *Coccinellidae: Axion incompletus* Nunenmacher, *Psyllobora koebelei, Hyperaspis wolcotti, Hyp. wellmani, Hyperaspis floribunda, Hyp. lateralis* var. *flammula;* with Schaeffer's new species and co-types of *Rhyssematus oculatus, Otidocephalus basalis, Brachytarsus nigromaculatus, Tychius suturalis, Bruchus crenatus, Laccophilus insignis, Xylotrechus quercus, Pogonocherus negundo, Chauliognathus obscurus, Ch. vittatus, Onthophagus arizonensis, Cymatodera antennata* and *Hydnocera fuchsi.*

Dr. C. Wellman exhibited specimens of the new *Hornia gigantea* collected by F. X. Williams in Kansas, together with other representatives of the Lyttid Tribe *Sitarini,* arranged so as to show the relations of the genera. He pointed out that through the palaeartic *Hapalus, Stenoria, Sitaris,* etc., the elytral reduction led by degrees to such strange forms as the Australian *Sitarida* and *Goetymes,* and that these in turn were replaced by the Asian *Sitarobrachys* and American *Leonidia* and *Hornia,* the last having the wings as well as the elytra almost wanting and the tarsal claws simple; in other words, the degradation had become complete.

In referring to Dr. Blaisdell's paper, he remarked, among other things, that the embryology and metamorphosis of animals were valuable as interpretative side lights on phylogenetic descent and that the pale forms were as a rule (which has many exceptions both from physical and selectional causes) primitive, pigmentation being a comparatively late phenom-

enon in many organisms. Reference was made to the influence of the remnants of the principal and cross-wing veins on the disposition of elytral fasciae and vittae.

Mr. Nunenmacher followed with remarks on the habits of a mud-dauber wasp and on type labelling.

Dr. Wellman took up the question of types and stated that with one type specimen there could be no mistake, or with a male and female type. The International Entomological Congress was recommended as a body to settle such questions.

Dr. Van Dyke stated, that as Dr. Wellman had been appointed Secretary of the International Entomological Congress, we should appoint him as our representative, and have Dr. Wellman use his influence to have the next Congress meet in San Francisco, in 1915.

Dr. Wellman was appointed as a committee of one.

A communication was then read from Mr. L. E. Ricksecker.

A discussion of the several papers and refreshments followed.

The Thirty-ninth Regular Meeting was held on the evening of February 25, 1911, at the Toke Point Grill, O'Farrell street, San Francisco, Cal. President Van Dyke in the chair. Ten members and six visitors were present.

Communications from Mrs. Kirkaldy, Prof. J. J. Rivers and Edw. Ehrhorn were read.

Prof. Rivers stated a desire to withdraw from the Society. It was moved and carried that he be made an honorary member.

President Van Dyke stated that it was desirable to obtain photographs or autographic letters from the older members of the Society, and also of other entomologists of the Pacific Coast, both of the past and present, a good beginning having been made in obtaining those of Prof. J. J. Rivers and W. G. W. Harford, both belonging to the older set of the recent workers.

Mr. Wm. Mann gave an account of collecting in Arizona,

at the lights, also on a trip to the Huachuca Mts. He stated that *Eleodes* was the characteristic beetle of that region; *Cychrus roeschkei* was taken on the trip.

Mr. J. C. Huguenin gave some very interesting information about collecting in winter in the vicinity of San Francisco. He stated that his records of capture of *Calligrapha sigmoidea* were as follows: February 26, 1910, three specimens; March 11, 1910, seven; April, 1910, nine; December 7, 1910, three; December 18, 1910, six; Jauuary 3, 1911, five; February 15, 1911, four; February 20, 1911, five; March 12, 1911, nine. Trips were made each month to the locality, and he stated that from his observations, he believed it to be a winter species. Eggs and larvae were found. The food plant is the wild hollyhock, a species of *Sidalcea*. All stages were exhibited.

President Van Dyke thought that they were the hibernating adults that had been coaxed out by the warm weather, and had crawled up on the plants as stated. He also stated that the time had arrived for a change in the methods of collecting, saying that it is necessary to investigate closely and to work out the life histories of the species. Close collecting is constantly adding new and interesting things. No new *Cicindelidae* have been recently added, but among the *Carabidae*, a new variety of *Trechus* near *barbarae*, and at the same time a new *Ochthebius*, with the MS. name of *marinus*. Both of these species belong to a between-tides fauna. In Marin Co., California, the blind *Tenebrionid*, *Eschatoporis nunenmacheri*, had recently been found by Mr. Nunenmacher. Other things never before found south of Washington had also been found there. We must work closely with the *Rhynchophora*, as many a new species, or species new to this locality, is to be found.

Working among the *Cossonidae* of the State, it was found that much confusion has occurred with regard to several of the species. There are five species of *Cossonus* found on the Pacific Coast, two of which are new. In the genus *Melöe*, two species not found here before, have recently been captured here. New *Otiorhynchids* are constantly being found.

After viewing and discussing the Exhibits, refreshments followed.

The Fortieth Meeting, or Annual Field Day of the Society was not held—F. E. BLAISDELL, *Secretary*.

THE NEWARK ENTOMOLOGICAL SOCIETY.

Meeting of September 10, 1911, at the Newark Turn Hall, Newark, New Jersey.

President Buchholz in the chair and eleven members present.

Messrs. Keller, Brehme and Angelman were appointed as a Committee to make arrangements for the Twenty-seventh Anniversary to take place in October.

Mr. Angelman reported *Ceratomia catalpa* caterpillars at Paterson, N. J., which is probably the most nothern point which this species has reached up to the present time.

Mr. Buchholz reported the following captures: One *Sesia* unknown to him bred in speedwell and taken at Rye, New York; a new *Acronycta* bred; larvae found at Lakehurst, N. J., food either huckleberry or oak; *Catocala herodias* and *Catocala coccinata* variety *sinuosa*, both taken at Lakehurst, on August 12th.

Mr. Grossbeck gave an interesting talk on his trip to Jamaica and stated that collecting was much easier in the United States than in the tropics. About forty photographs illustrated his talk.

Meeting of October 8, 1911, at the Newark Turn Hall.

President Buchholz in the chair and ten members present.

Mr. Brehme reported the capture of *Catocala connubialis*, formerly called *sancta* Hulst, at South Elizabeth, N. J., July 23rd. This is the first record of this species being taken in New Jersey. There is no question about its being a native of this State, as the specimen only emerged a short time before it was captured.

Mr. Brehme also reported on the abundance of *Catopsilia eubule* along the coast from Monmouth Beach to Beach Haven

during August and September. By all appearance this species is also a native and not a visitor only.

After adjournment the members partook of a dinner, in celebration of the Society's Twenty-seventh Anniversary.—

Meeting of November 12, 1911, in the Newark Turn Hall.

President Buchholz in the chair, nine members present.

Messrs. Keller, Brehme and Grossbeck were appointed as the Nominating Committee for the election of officers in December.

Mr. Zaiser reported the capture of *Deilephila chamoenerii*.

Mr. Lemmer reported the capture of one *Gypsochroa sitellata* (Geom.) at light in Irvington, August 16th. This species is new to the State.

Mr. Buchholz showed a very interesting series of *Papaipema*, comprising thirteen species all raised by himself from larvae collected during the past season.

Meeting of December 10th, 1911, in the Newark Turn Hall.

President Buchholz in the chair, thirteen members present. Visitor, Mr. John Hampson, of Newark.

The Nominating Committee selected the following members to hold office for the year 1912, and they were duly elected:

President, Otto Buchholz (reelected); Vice-President, Adolf Schleckser; Secretary, Fred Lemmer; Financial Secretary, T. D. Mayfield (reelected); Treasurer, George J. Keller (reelected); Librarian, Herman H. Brehme; Trustees, for three years, Wm. J. Erhard; for two years, Julius Buenson; for one year, Louis Doerfel; Curator of Lepidoptera, Herman H. Brehme; Curator of other Orders, Edwin E. Bischoff.

Mr. Henry H. Brehme, of Newark, and Mr. Justus Kaiser, of Woodhaven, Long Island, were elected members.

Mr. Herman H. Brehme showed a very interesting series of *Junonia coenia*, 25 specimens in all, and no two alike, although all were from the same brood.

HERMAN H. BREHME, *Secretary*.

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